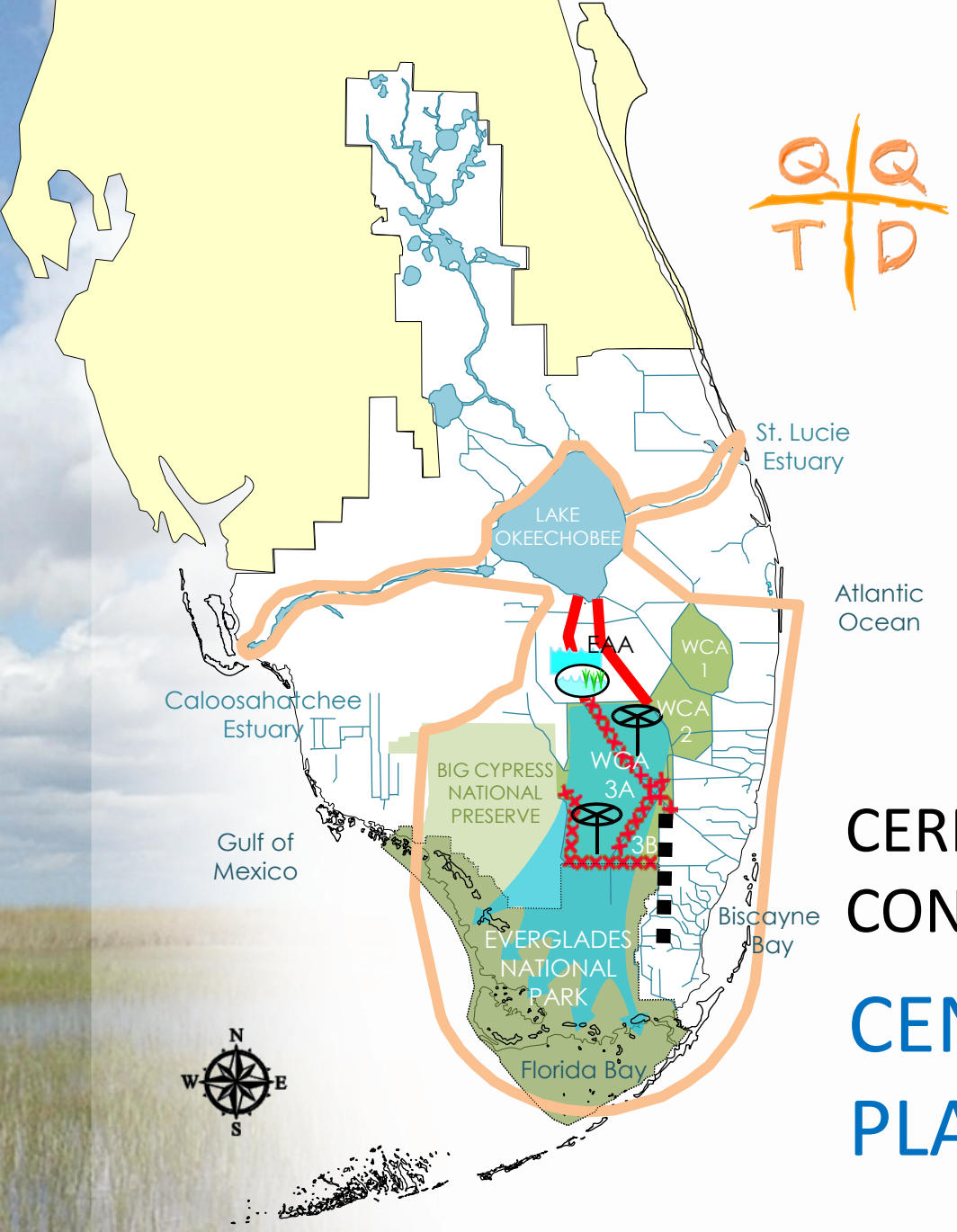
CENTRAL EVERGLADES PLANNING PROJECT

Governing Board Update

Tom Teets,
Office of Everglades
Policy and Coordination

March 15, 2012



Central Everglades Planning Project Study Area

Storage, Treatment, and Conveyance in the EAA

Decompartmentalization and Sheetflow Enhancement

Seepage Management

Operational Changes

CERP COMPONENTS UNDER CONSIDERATION

CENTRAL EVERGLADES PLANNING PROJECT

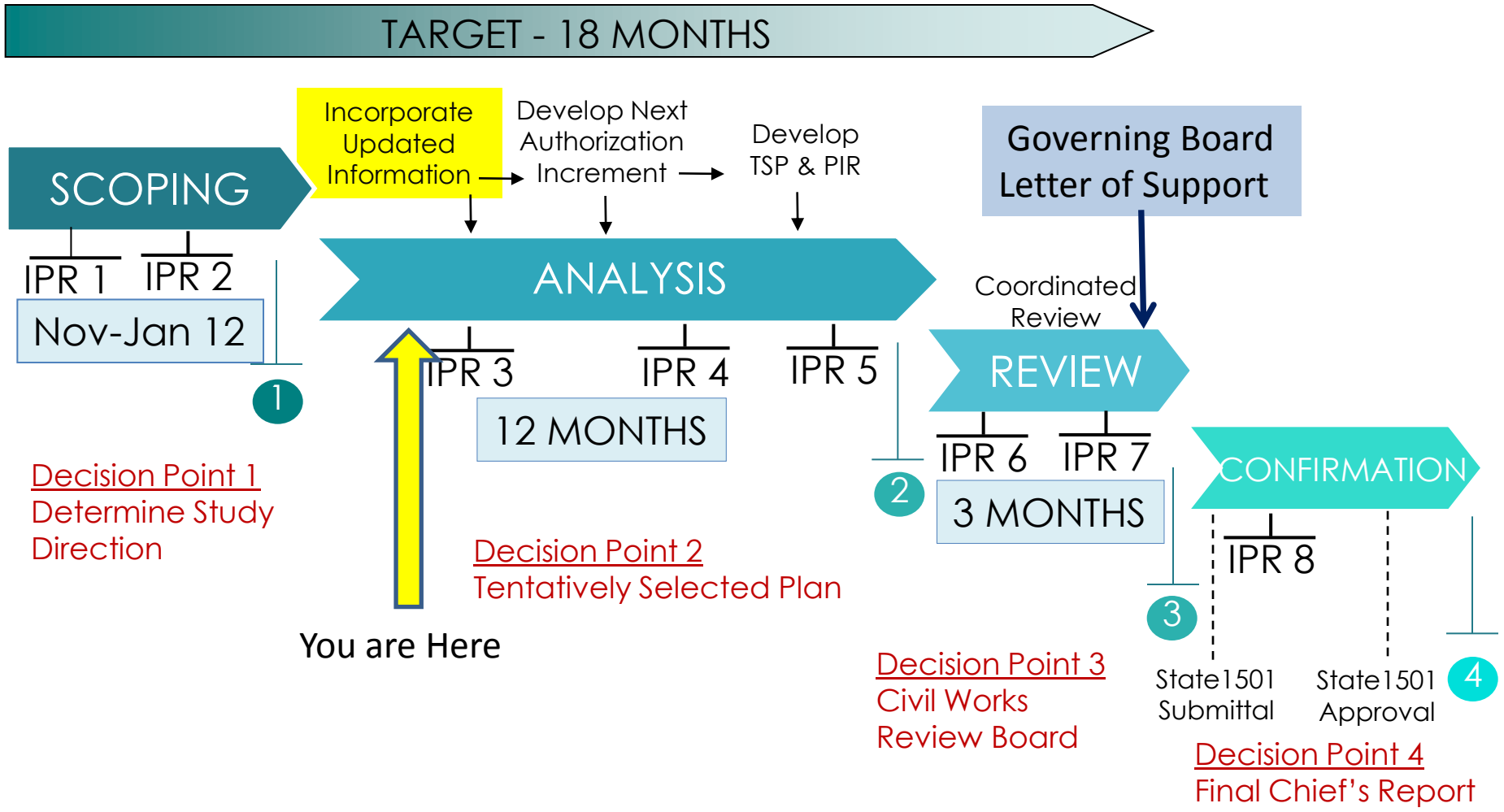
NEPA SCOPING TOPICS-COMMENTS

- Water Quality Requirements
- Water Quality and Quantity Assumptions
- Savings Clause Analyses
- Use of Existing SFWMD Lands
- Modified Water Deliveries Project Features
- Use of Adaptive Management
- Multi-Species Approach
- Ecosystem Services Benefit Analysis
- Expedited Planning Process
- Seepage Control
- Lake Okeechobee Regulation Schedule
- Incorporation of ASR
- Recreation
- Incorporation of “new” science
- Modeling & Evaluation Tools
- Trade-offs
- Water Levels in WCA-3A
- Decompartmentalization of WCA-3A
- Bridging

GOALS AND OBJECTIVES

- **<u>GOAL: Enhance Ecological Values</u>**
- **Improve habitat and functional quality**
  - Restore seasonal hydroperiods and freshwater distribution to support a natural mosaic of wetland and upland habitat in the Everglades system
  - Improve sheetflow patterns and surface water depths and durations in the Everglades system in order to reduce soil subsidence, the frequency of damaging peat fires, the decline of tree islands, and salt water intrusion
  - Reduce high volume discharges from Lake Okeechobee to improve the quality of oyster and SAV habitat in the northern estuaries
- **Improve native plant and animal species abundance and diversity**
  - Reduce water loss out of the natural system to promote appropriate dry season recession rates for wildlife utilization
  - Restore more natural water level responses to rainfall to promote plant and animal diversity and habitat function
- **<u>GOAL: Enhance Economic Values and Social Well Being</u>**
- **Increase availability of fresh water (agriculture/municipal/industrial)**

CENTRAL EVERGLADES PROCESS



IPR: In-Progress Review with Corps Leadership

ANALYSIS PHASE

- **Project Delivery Team- March 1**
  - Draft Project Management Plan (Scope & Schedule Document)
  - Developed Draft Plan Formulation Strategy
  - Initial Screening of Management Measures
  - Initial Screening of Lands in EAA for Siting Features
  - Modeling Assumptions for Existing and Future Without Project Condition
  - Next PDT Meetings– March 26

  - **Working Group Sponsored Public Workshops**
  - 2-Day Science Workshop (February 13-14)
  - Recreation Workshop (north of I-75) (March 1)
  - EAA Workshop-Configuration Development Exercise (March 9)
  - Recreation Workshop – south (April 17)

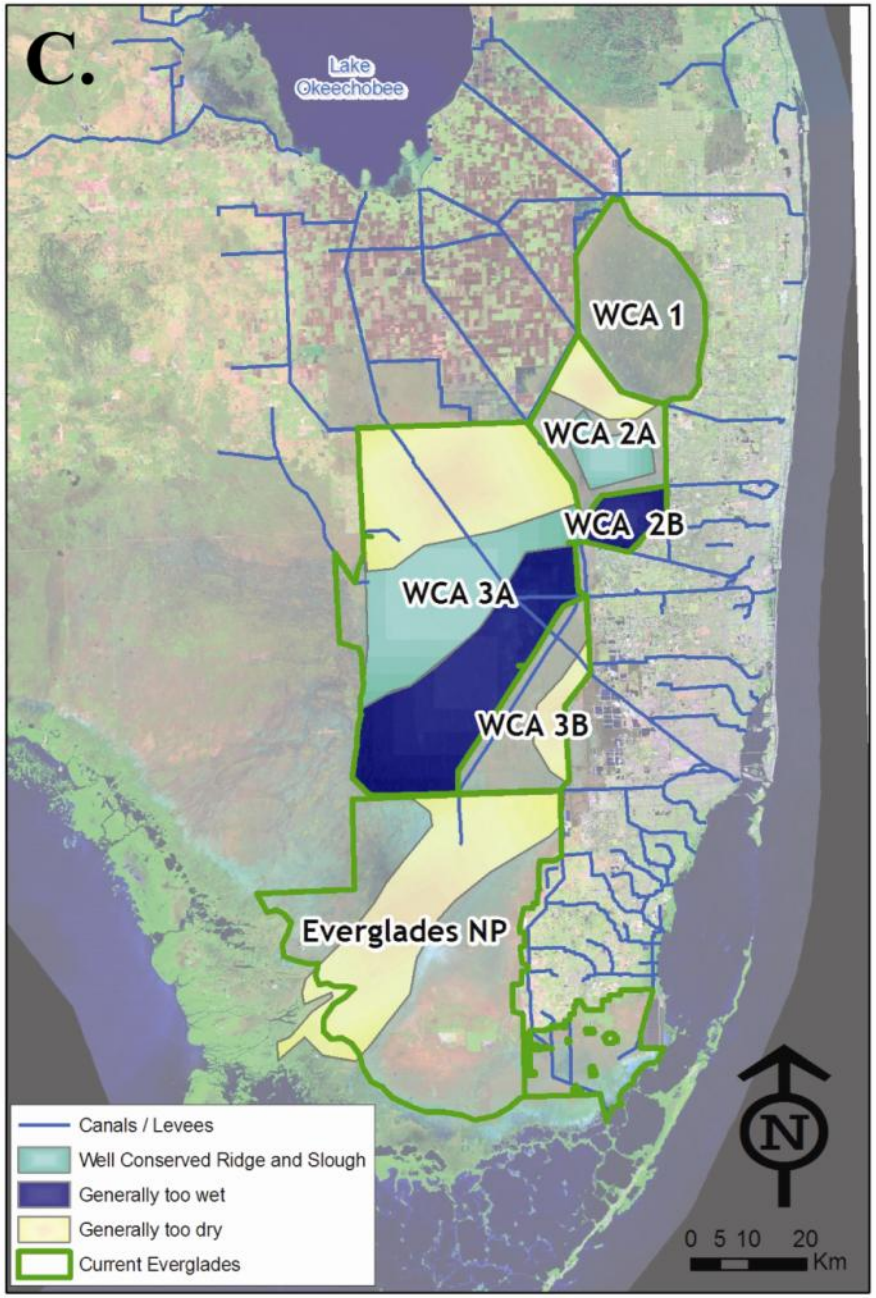
SCIENCE COORDINATION GROUP (SCG) PUBLIC WORKSHOP ON SCIENCE
FEBRUARY 13 and 14

SCG SPONSORED PUBLIC WORKSHOP ON SCIENCE

- More than 170 participants, ~90 in person, and ~80 viewed the live webcast
- Participants included the public, NGOs, public officials, agency staff, consultants, managers, scientists, and engineers
- 30-min presentations, 30-min discussions
- No shortage of questions and discussion

SCG SPONSORED WORKSHOP ON SCIENCE "What We Heard"

- A sense of urgency, but not despair
- Current declines can be mitigated or reversed
- Significant new science since 2000 that is relevant to CEPP (wetter Everglades, greater flows, targets, and super colonies)
- There are new and improved tools, particularly models
- A practical focus on what this next increment can accomplish



Prioritize restoration in areas that are most in peril, but that have high potential to respond to increased flows

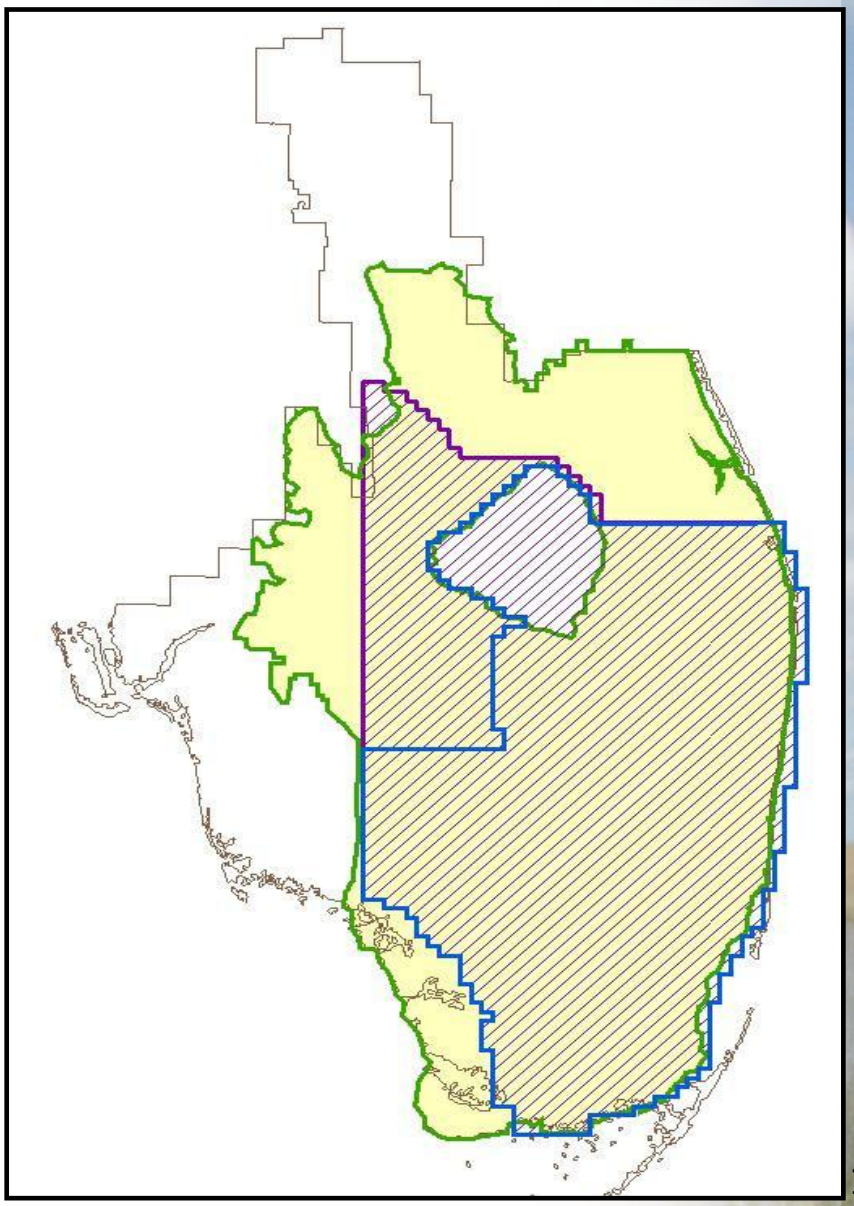
The most effective way to preserve high functioning ridge-slough will be through careful water depth management with pulsed flow releases that maximize water surface slope for weeks per year.

Larsen, Harvey, and Crimaldi, *Ecological Engineering*, 2009

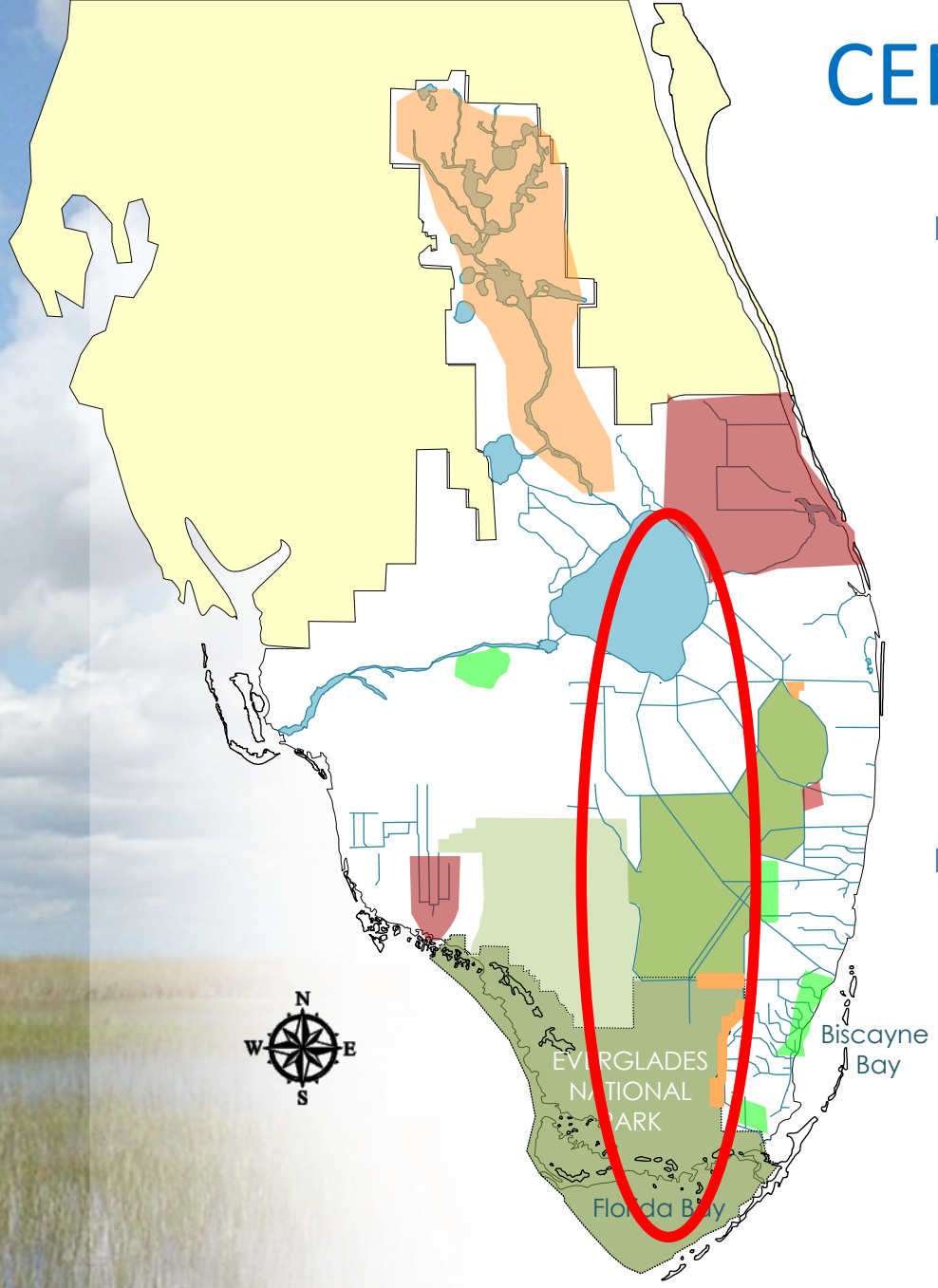
NEW TOOLS

Model Comparison

- **NSM 9,000 mi²**
  - **2328 2x2 mile grid cells**
- **SFWMM 7,000 mi²**
  - **1,746 2x2 mile grid cells**
- **NSRSM 12,000 mi²**
  - **7,438 Triangular (variable mesh) cells ranging 0.75 miles per side to 5.5 miles per side**

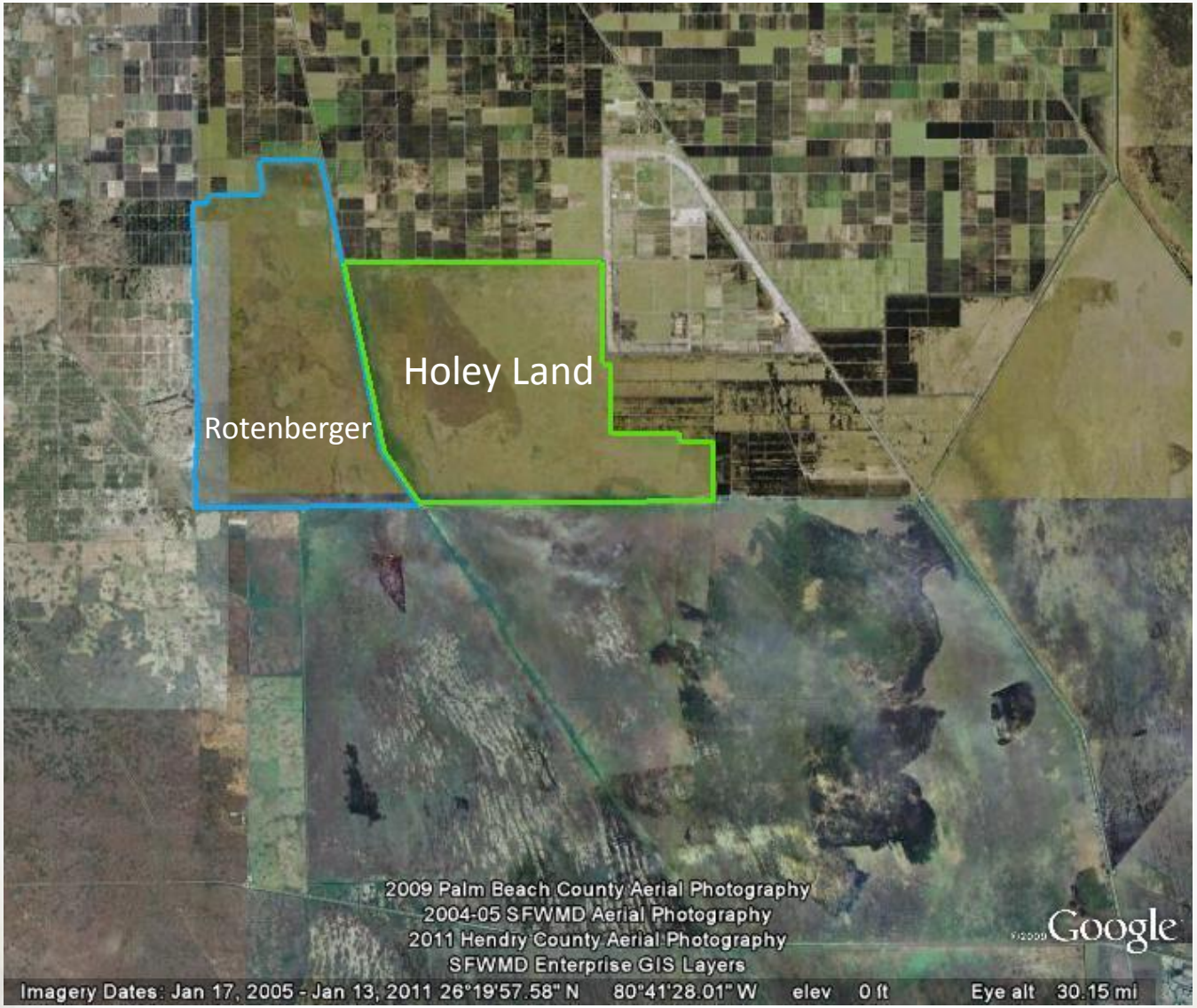


CENTRAL EVERGLADES

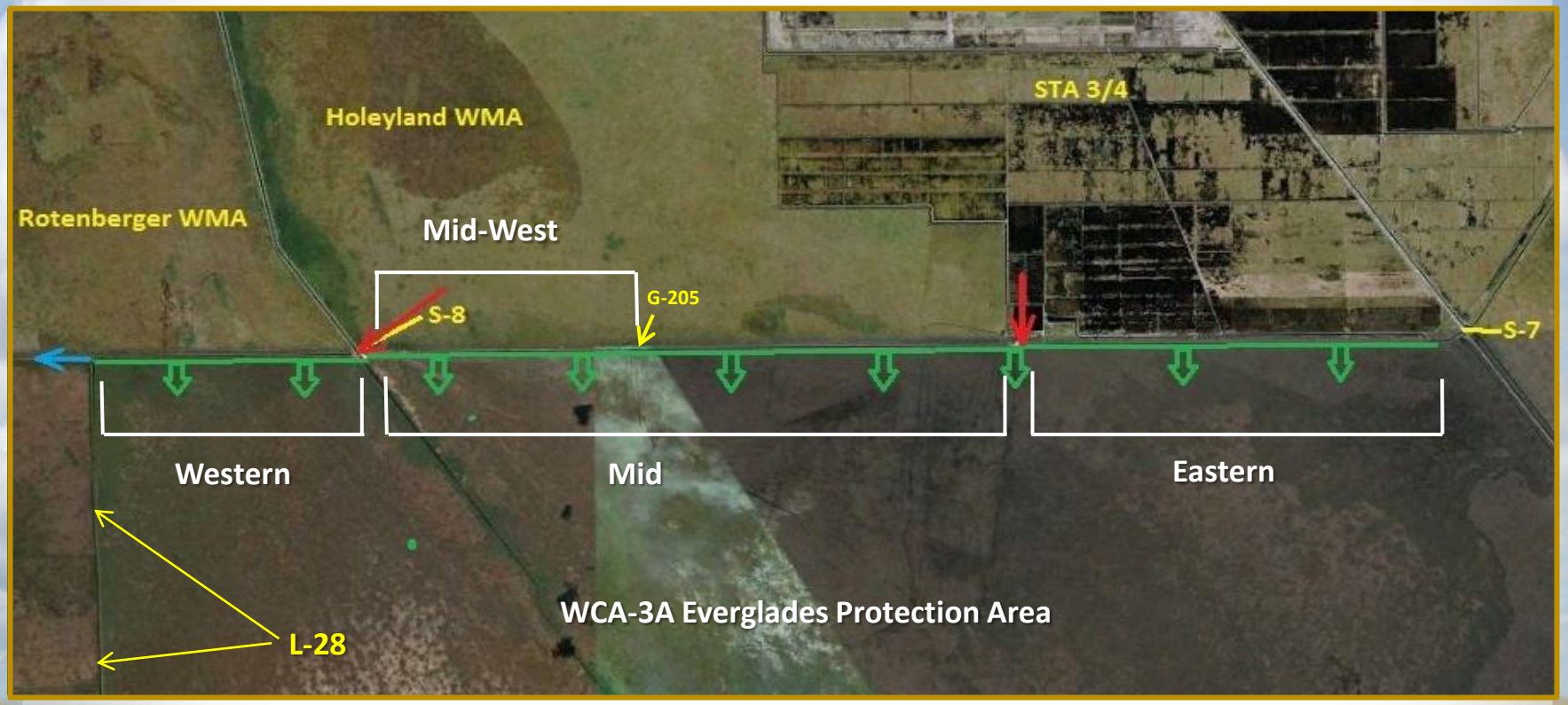


- Restoration objectives for the Lake and the estuaries are consistent with those for the Greater Everglades
- A practical focus on what this next increment can accomplish

WORKING GROUP SPONSORED RECREATION WORKSHOP
Northern Portion of Central Everglades



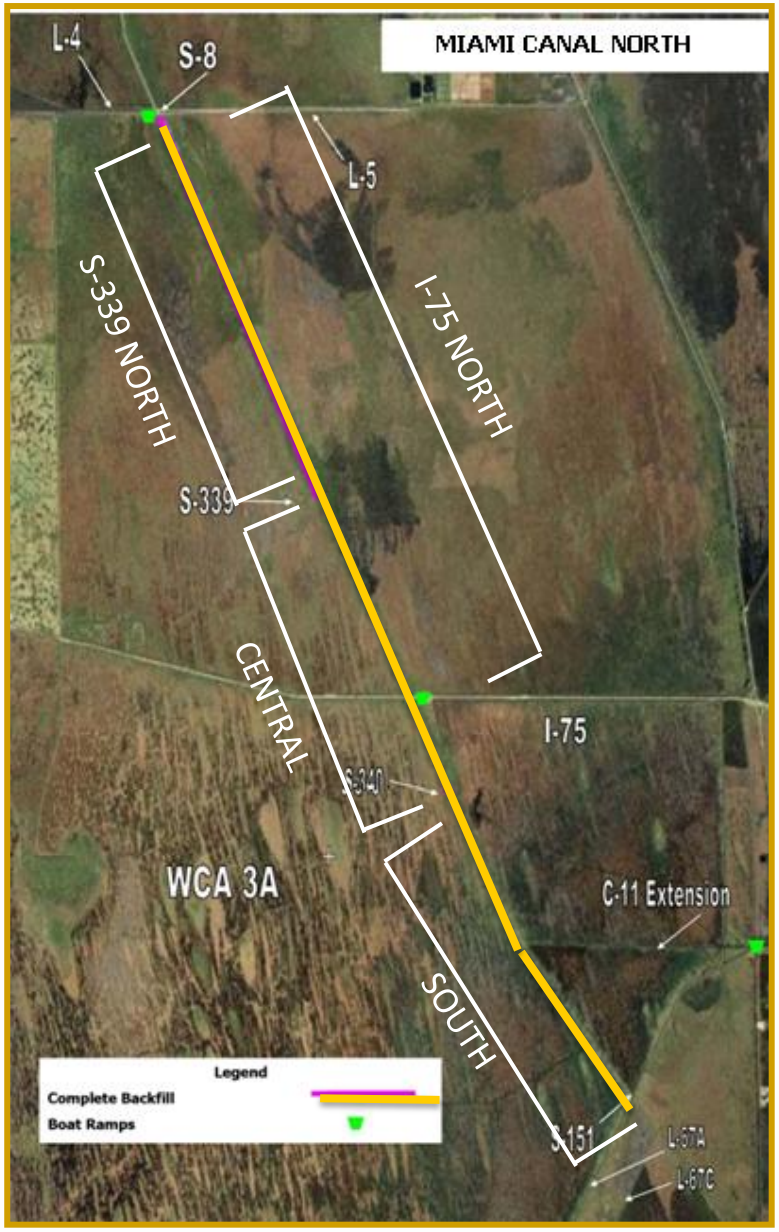
HYDROPATTERN RESTORATION



4 sections with new pump stations to redistribute inflows

- Western: degrade L-4 Levee from S-8 to L-28 (3.3 miles)
- Mid-western: spreader canal parallel to L-5 Levee (3.5 miles)
- Mid – spreader canal parallel to L-5 Levee (8.5 miles)
- Eastern – gap "remnant" L-5 (5 miles; 1000' gaps at 0.5 mile intervals)

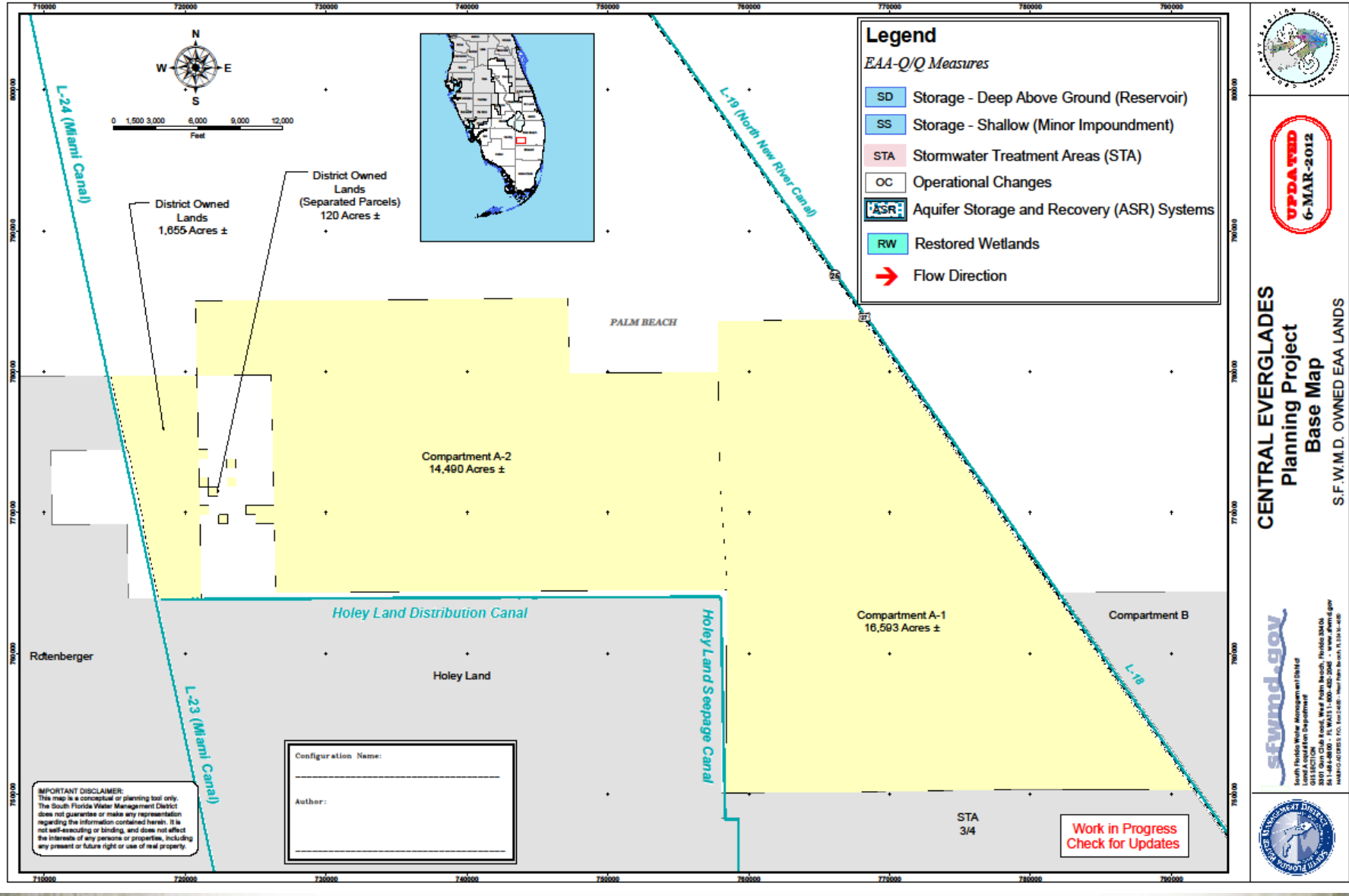
MIAMI CANAL SEGMENTS



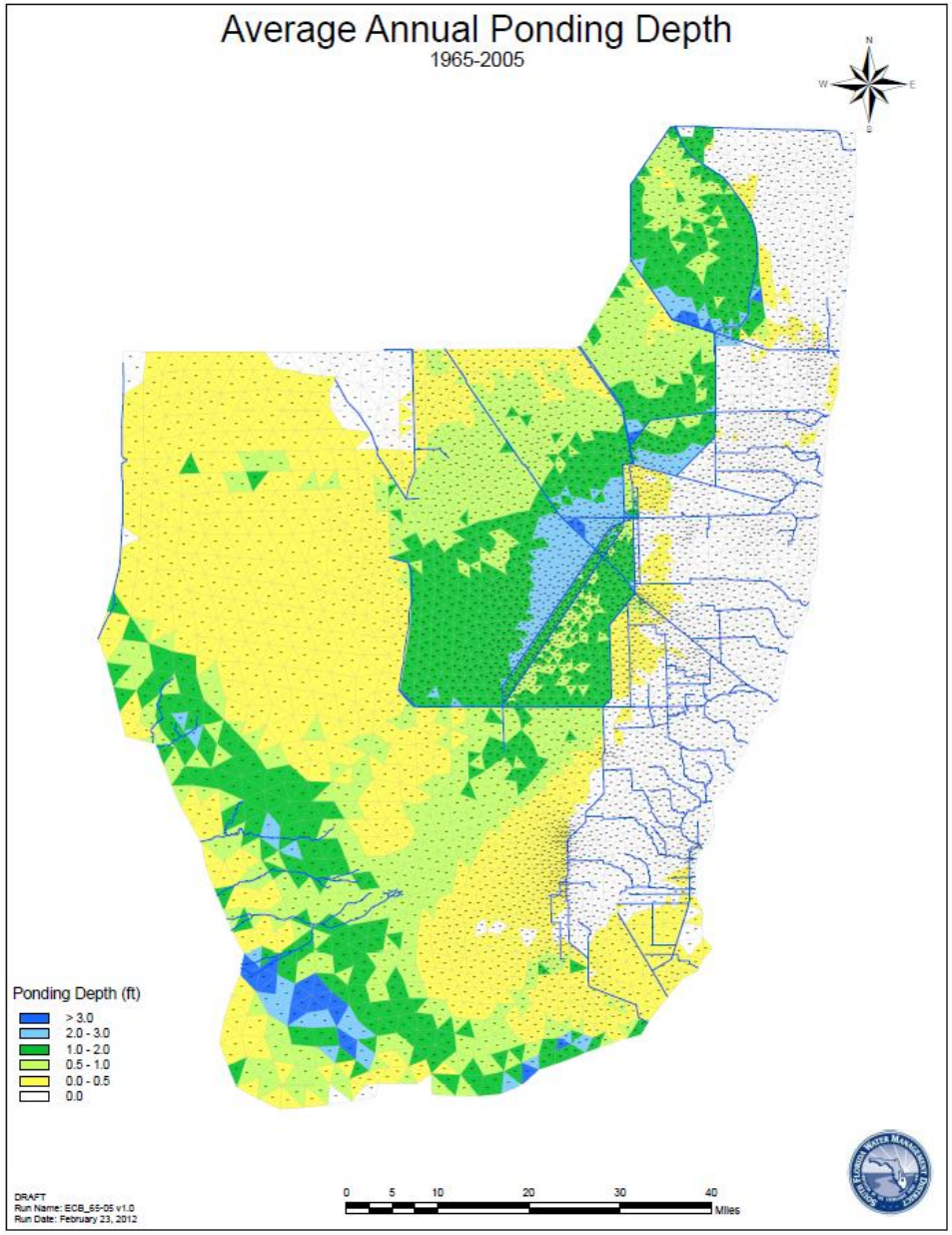
WORKING GROUP SPONSORED WORKSHOP March 9

- Project Feature Siting Analysis
- Feature Type Trade-Offs
- Configuration Development Exercise
- Existing Conditions Performance
- Screening Framework

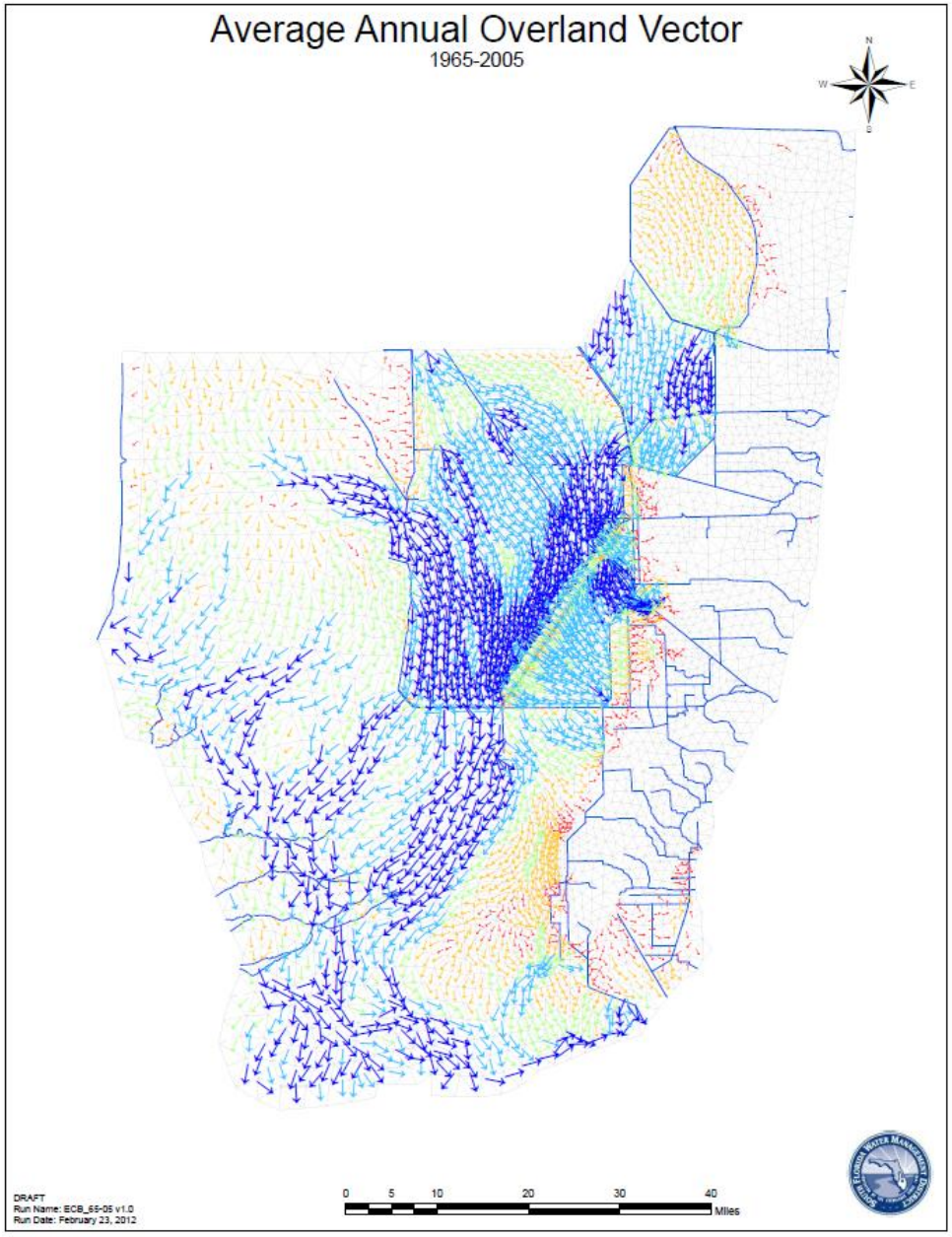
CONFIGURATION DEVELOPMENT EXERCISE



EXISTING CONDITIONS

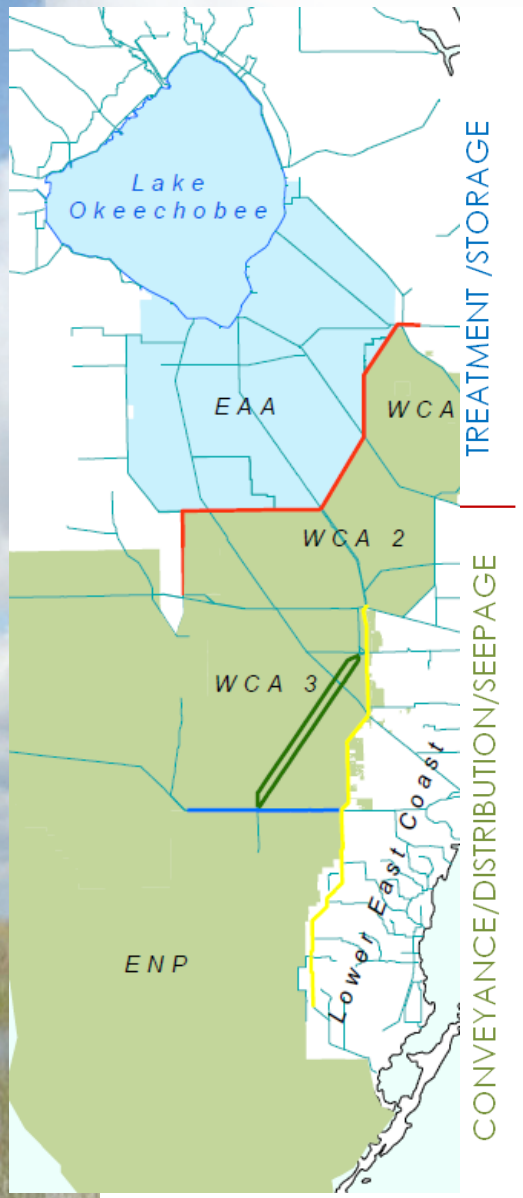


EXISTING CONDITIONS



PLAN FORMULATION AND EVALUATION STRATEGY

CEPP PLAN FORMULATION FRAMEWORK



TREATMENT /STORAGE

CONVEYANCE/DISTRIBUTION/SEEPAGE

INITIAL SCREENING

RANGE OF SIZES

SCREEN AND OPTIMIZE
(RESOPS, Eco-criteria, Cost)

You Are Here

Option A | Option B

WATER BUDGET

COMBINE OPTION A AND OPTION B WITH CONVEYANCE, DISTRIBUTION AND SEEPAGE MEASURES

NOTE: Potentially large number of combinations

SCREEN AND OPTIMIZE
(RSM, Parametric Costs, Eco-Criteria)

Final Array of Alternatives

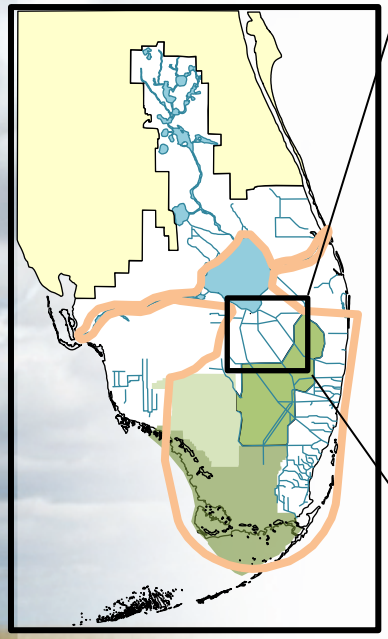
A1 A3 A7 B2 B3 B6

DETAILED EVALUATION
(Ecological benefits, Planning-level Costs, CE/ICA, P&G criteria, System of Accounts)

TSP

CEPP

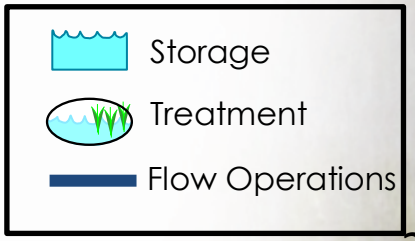
QUANTITY & QUALITY



Management Measures

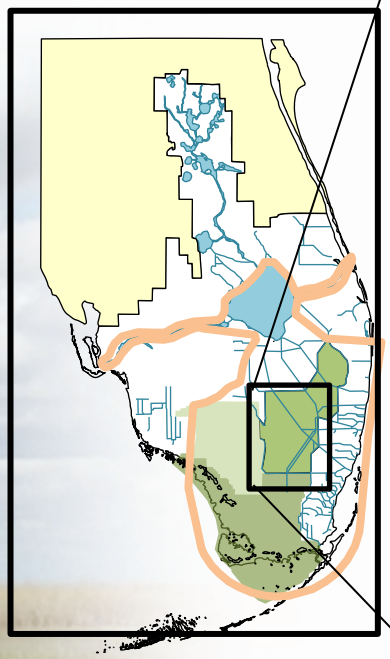
- Shallow storage
- Deep storage
- Storm Water Treatment Areas
- Aquifer Storage & Recovery
- Improved conveyance
- Operations

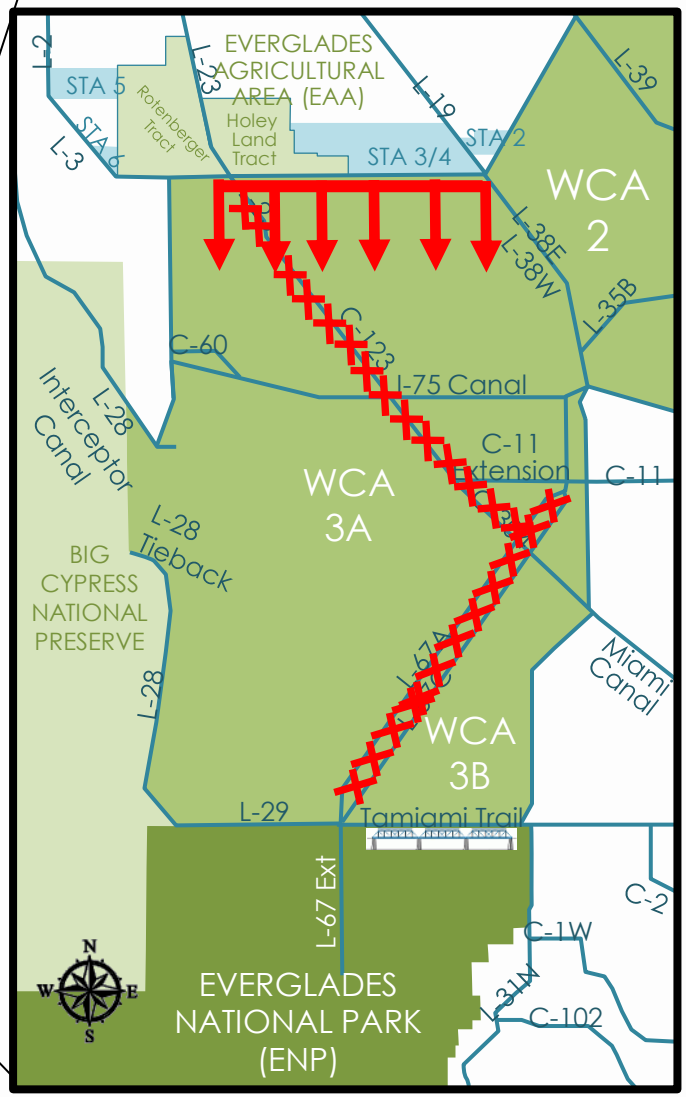
Management measures for Quantity/Quality will be formulated to reduce high volume discharges from the Lake and restore seasonal hydroperiods and freshwater distribution in the Everglades system.



CEPP

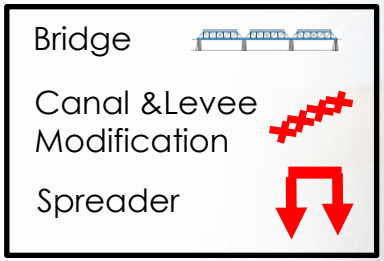
CONVEYANCE & DISTRIBUTION





Management Measures

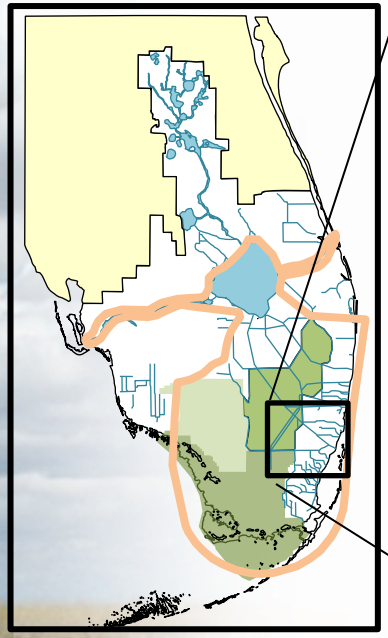
- Canal plugs & backfill
- Spoil mound removal
- Spreader canals
- Levee removal, gaps
- Gated water control structures, culverts, weirs
- Bridging
- Collector canal
- Operations

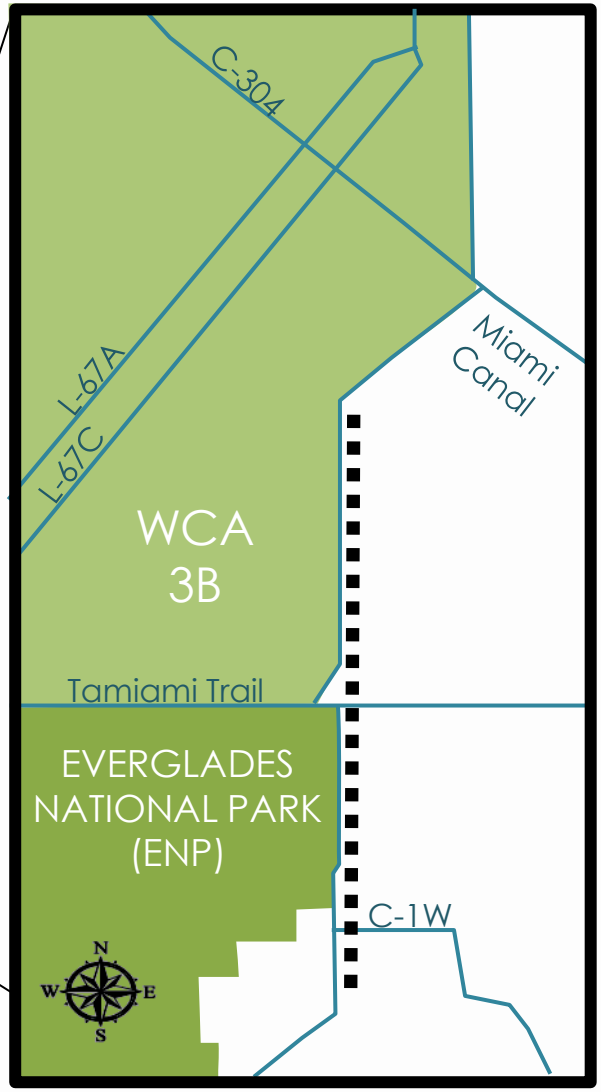


Management measures in the WCAs and ENP will be formulated to meet objectives for distribution and conveyance (location, direction, depths, volume, and/or timing) of the available water.

CEPP

SEEPAGE MANAGEMENT





Management Measures

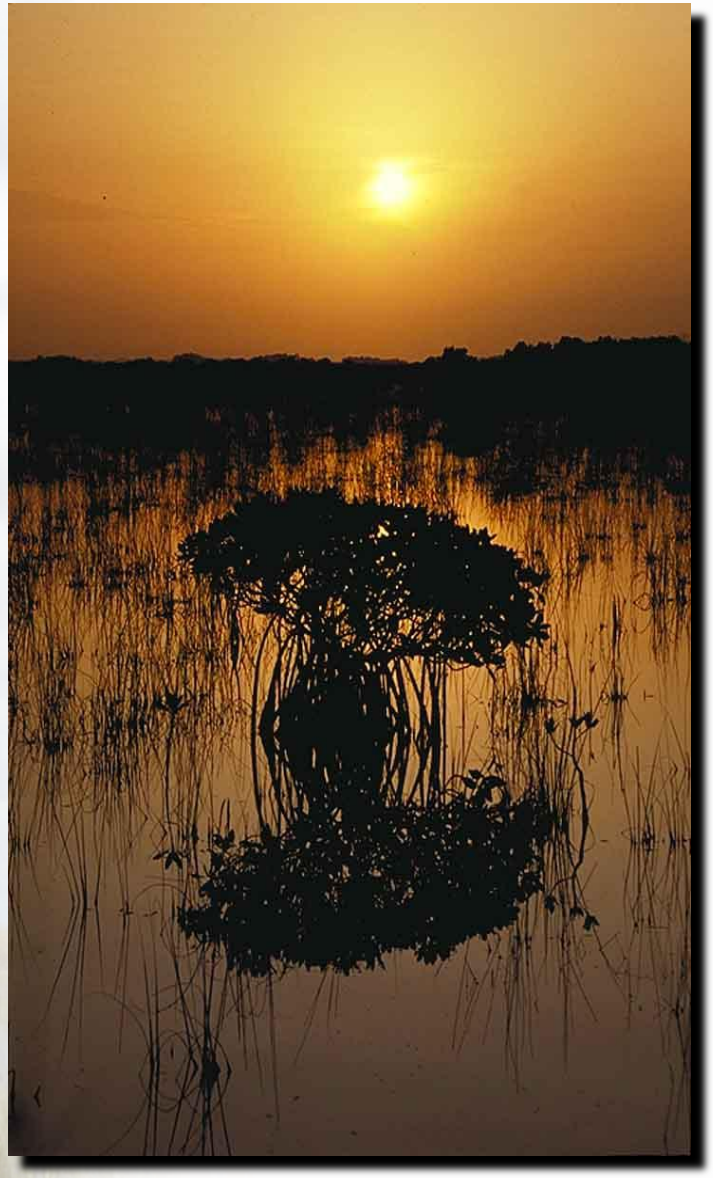
- Detention areas
- Seepage collection canals & pumps
- Raise canal stages
- Flood attenuation reservoir
- Re-locate existing canals or pump stations
- In-ground barriers

Seepage Management

Management measures are necessary to control seepage along the eastern side of WCA-3B and ENP, retaining water in the natural system while satisfying the planning constraint for flood risk management.

NEXT STEPS

Task	Completion
Initial Management Measures Screening	April 1, 2012
Component optimization and alternative development	August 30, 2012
Evaluate final array of alternatives and select preliminary TSP	October 30, 2012
Formal Letter of Support by Governing Board	March /April 2013



QUESTIONS?